AN EVALUATION UNDER THE ENVIRONMENTAL ASSESSMENT ACT OF SELECTED CONSTRUCTION PROJECTS IN NORTHWESTERN ONTARIO 1986

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INTRODUCTION

The Environmental Assessment Act (1975) was enacted to achieve "the betterment of the people of the whole or any part of Ontario by providing protection, conservation and wise management, in Ontario of the environment", where the environment includes both the bio-physical environment and social, economic and cultural conditions which influence the life of humans or community. The Act requires that undertakings, which may impact on the environment, undergo an environmental assessment unless specifically exempted. These undertakings may be either on a "Specific" or on a "Class" basis. "Specific" environmental assessment (EA), deals with individually defined undertakings. A "Class" EA provides a system of dealing with certain types of projects which have common characteristics and that are relatively small in scale, recur frequently and that have generally predicable ranges of effect. The "Class" EA includes the proponent's procedures to satisfy the requirements of the Act for each project within the class. It should also be noted that even exempted projects can be required to maintain certain environmental standards.

As a continuation of a program initiated in 1985, a number of projects in northwestern Ontario that were being conducted under the auspices of the Environmental Assessment Act were selected for site inspections in 1986. These inspections, or audits, were designed to evaluate the degree to which the projects complied with the requirements of the Environmental Assessment Act. The 1985 study observed that most of the activities inspected complied with the Environmental Assessment Act, but several contraventions of the Act were noted. Inspections in 1986 were intensified to confirm, extend and where possible clarify the findings of the 1985 study.

These undertakings were managed primarily by the Ministry of Natural Resources (MNR), Ministry of Transportation and Communi-

cations (MTC) and Ontario Hydro (OH), and represent a diverse range of construction activities, such as road building, bridge construction, and hydro dam repairs. Auditing these projects not only revealed the degree to which EA conditions are being followed but also provided useful insight into the effectiveness of the EA process.

PROCEDURES

Planning for the audits commenced in early spring of 1986. At that time, a list of projects to be considered during the upcoming summer and fall was developed. From this list, a number of construction activities were selected for inspection primarily on the basis of the potential to adversely affect the natural environment. These projects included dam repairs, road construction, bridge construction, bridge painting, and building erection. Most activities received more than one inspection, and in some cases of on-going construction, multiple visits were undertaken. Contact with the proponent was made prior to inspection in most cases. Project descriptions, locations and date(s) of inspection are presented in Table 1. Site locations are shown in Figure 1.

ASSESSMENTS

Recognizing that the intent of the Environmental Assessment Act is to minimize adverse environmental effects from developing staff qualitatively evaluated the "green hat" concerns of the various activities. This was conducted bearing in mind the mitigative procedures outlined in the proponent's environmental study report. More than 135 site inspections were carried out in 1986. Photographs were taken of the major projects (see attached). These photographs have helped minimize concerns over the subjective nature of this exercise.

TABLE 1. Activities audited under the auspices of the Environmental Assessment Act, 1986.

Site Number	E. A. Type	Proponent	Location	Description	Inspection Date(s) 1986
OH1	Exemption	Hydro	Rat Rapids Control dam on Albany River	Repair of Hydro dam	Jul 15, Oct 1
OH2	Exemption	Hydro	Cedar Channels dam on Albany River	Repair of Hydro dam	Jul 16, Oct 2
NR1	Exemption	MNR	Steel River access road	Road construction	Jul 9, Oct 17
NR2	Exemption	MNR	Separation Lake	Fish Consumption Advisory	Jun 26, Sept 4
NR3	Exemption	MNR	North of Kenora (Reddit)	Road and bridge construction	Jun 26, Sept 4
NR4	Exemption	MNR	Ouimet Canyon	Road construction	Oct 16
TC1	Exemption	MTC	Hwy 17 at Pic River	Bridge Repairs	Jul 9, Oct 17
TC2	Exemption	MTC	Hwy 626, between Marathon and Hwy 17	Hwy Construction	Jul 9, Oct 16
TC3	Exemption	MTC	Steel River bridge	Road drainage and maintenance	Jun 12, 13, 24 28, Sept 2, Oct 1, 2
TC4,5	Exemption	MTC	Hwy 17, Pays Plat. and Gravel bridges	Bridge painting	Jul 9, Oct 17
TC6	Class	MTC	Current River Bridge N Br. Road	Bridge construction	May 14, Jun 5 Jul 31, Aug 25 Setp 10, Oct 16
TC7	Exemption	MTC	Hwy 595 at Hymers	Road Construction	Jun 12, Jul 15, 25, Aug 26, Oct 2
TC8	Class	MTC	Hwy 130, Hwy 61 northerly Schans Corners 5.2 km	Highway construction	Jul 9, Oct 16, 17

TABLE 1. Continued

Site Number	E. A. Type	Proponent	Location	Description	Inspection Date(s) 1986
TC9	Exemption	MTC	Hwy 17, 2.9 km W of Savanne westerly to Upsala 17.2 km	Road resurfacing and patching	Jun 12, 13 24, 28
TC10	Exemption	MTC	Hwy 17, CPR crossing west of Upsala	Bridge Repairs	Jun 12, 13, 24, 28 Jul 15, 16, 22, 25, Sept 2, 5, Oct 1, 2
TC11	Exemption	MTC	Hwy 17, English River	Bridge repairs	Jun 12, 13, 24, 28 Jul 15, 16, 22, 25, Sept 2, 5, Oct 1, 2
TC12	Exemption	MTC	Hwy 17, west of English River bridge	Road resurfacing and patching	Jul 15, 16 22, 25
TC13	Exemption	MTC	Hwy 17, CPR Crossing east of Igance	Bridge Repairs	Jun 12, 13, 24, 28 Jul 15, 16, 22, 25, Sept 2, 5, Oct 1, 2
TC14	Exemption	MTC	Hwy 17, Gulliver R.	Bridge repairs	Jun 12, 13, 24, 28 Jul 15, 16, 22, 25, Sept 2, 5, Oct 1, 2
TC15	Class	MTC	Hwy 599, 21.5 km N of CNR at Valora Northerly 14 km	Highway construction	Jul 15, 16 Oct 1, 2
TC16	Class	MTC	Hwy 17, 10.9 km E Borups Corners westerly of Hwy 72	Road resurfacing and patching	Jun 12, 13, 24 Jun 25, 28, Jul 15, 25, 16, 22, 25, Sept 2, 5, Oct 1, 2
TC17	Class	MTC	Bending Lake	Hwy construction	Jul 15
TC18	Class	MTC	Hwy 17, PCB resurfacing various locations for 89 km	Road resurfacing and patching	Jul 22, 23 Sept 3, 4

TABLE 1. Continued

Site Number	E. A. Type	Proponent	Location	Description	Inspection Date(s) 1986
TC19	Exemption	MTC	Kenora Bypass	Hwy and bridge construction	Jun 27, Jul 23, Sept 3
TC20	Class	MTC	Hwy 17, Keewatin Bridge rehabilitation in Kenora	Bridge repairs	Jun 25, Jul 23 Sept 3
TC21	Exemption	MTC	Hwy 11, Rainy Lake Causeway	Structure Repairs	Nov 6, 7
TC22	Exemption	MTC	Hwy 11, Flanders easterly to Hwy 118 Atikokan 38.5 km	Road resurfacing and patching	Nov 6, 7
TC23	Class	MTC	Hwy 622, Sumac Road Atikokan, northerly to end of Hwy	Highway construction	Nov 6
LCA	Exemption	LCA	Neebing River	Bank Stabilization	Aug 28

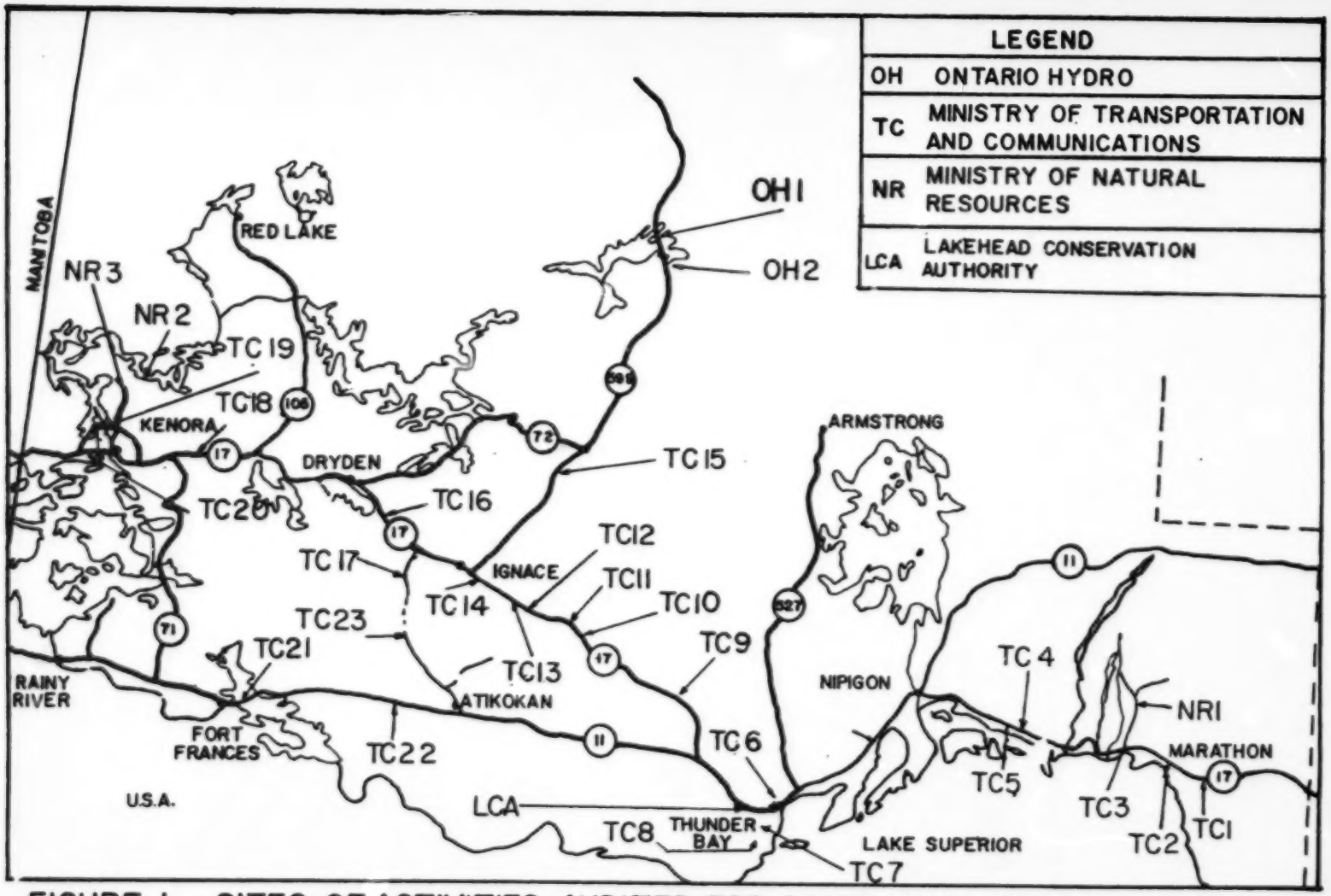

FIGURE 1 SITES OF ACTIVITIES AUDITED FOR COMPLIANCE WITH THE ENVIRONMENTAL ASSESSMENT ACT

BRIDGE CONSTRUCTION

There were several projects involving bridge construction activity. Photographs of selected stream and river crossings are shown in Figures 1 to 12. Although there are a number of environmental concerns associated with bridge construction, most centre upon the potential for adverse effects from increased turbidity or suspended solids during the construction phase. In general, the audits confirmed that sound environmental practices were employed. We noted the following:

1) Only clean fill was incorporated in abutments and backfill below the high water line. Clean granular material that was not eroded by the stream or surface runoff was used. (Figures 1 - 4).

2) Any constriction of flow was compatible with stream bed material, thus, preventing erosion or other damage caused by an increased flow velocity (Figures 2, 4).

3) The disturbance of vegetation cover appeared to be avoided as much as possible and the disturbance of soil cover appeared minimized.

4) Fill and excavated materials were disposed away from the watercourse.

5) During bridge construction necessary measures were used to prevent or minimize stream contamination by such materials as lime, cement and asphalt. For example in Figure 5 old concrete from the Pic River bridge was consolidated prior to removal. At the Keewatin Bridge the loss of waste material to underlying waters was minimized by the supporting structure. (Figures 6, 7). Forms on the Gulliver River Bridge kept concrete "in place". (Figures 8, 9). Extraneous concrete was deposited away from the watercourse. (Figures 10,11).

7) During construction at many projects there was limited evidence of refuse. (Figures 4, 8). Upon completion of the project, any temporary fill, culverts and refuse was removed from the construction area. (Figures 1, 3, 12).

ROAD CONSTRUCTION

The majority of the projects that were evaluated involved road construction. This construction activity generally met the requirements of the Environmental Assessment Act.

1) In most cases, the disturbance of soil and vegetation was avoided as much as possible (Figures 13-15).

2) Road surfaces appeared to be designed to dissipate runoff water and minimize erosion.

3) Staff did not observe stream contamination by materials such as lime, concrete, asphalt, or petroleum products.

4) Where necessary water trucks were used for dust suppression. (Figure 16).

5) Where culverts were installed, the stream beds were largely left in their pre-construction configuration after completion of work. The installation of a culvert on Highway #595 resulted in minimal disruption to water quality. (Figure 17). The materials of the stream bed and bank were able to resist erosion. (Figure 18). Culverts appeared to be designed to convey base flows and accommodate peak flows without creating flooding or adverse back water effects. Staff did not observe ponding effects on adjacent properties due to natural drainage disruption.

6) Upon completion of the projects, temporary culverts, fill and refuse were removed from the construction site. No critical habitat appeared destroyed by the construction activity.

7. Construction sites were generally free of litter (Figure 19) and construction materials were stored in an orderly fashion. (Figure 20).

8. Erosion of the right-of-way adjacent to the actual road was minimal in most areas particularly where parts have been revegitated (Figure 21) or protective measures were employed (Figure 22). On parts of the Steel River Access(site TC-12), however, significant erosion is evident. (Figure 23, 24).

BRIDGE PAINTING

Inspection of the several bridges that had been repainted revealed no environmental concerns (Figures 25 and 26). There was no evidence of adverse environmental impact on the adjacent waters or land.

DISPOSITION OF CROWN LAND

One example of the Ministry of Natural Resources (MNR) Exemption 26, the disposition of crown land was re-investigated to follow-up an exemption that was not in compliance with the Environmental Assessment Act in 1985. Briefly, the project involved the privitization of an access point at Separation Lake Narrows, part of the mercury-contaminated English River system. Much of the sports fishery in this system has mercury levels well in excess of 0.5 µg/g, the level set by the Canadian Food and Drug Directorate for unlimited human consumption. Because of this situation, the Ministry of the Environment had voiced concerns that the public should be warned via the maintenance of an appropriate notice at that site. MNR concurred following extensive discussions.

To satisfy the requirements of the exemption, MNR agreed that "the operator of the site would be requested, as a condition of the Land Use Permit, to maintain a supply and to prominantly display copies of the "Guide to Eating Ontario Sportsfish" (letter from Johnston to Vrooman, May 9, 1985). Examination of the Land Use Permit, which was subsequently issued, revealed that the aforementioned condition was not included. Thus, the activity was not in compliance with the Environmental Assessment Act. When this was brought to MNR's attention, MNR staff in Kenora gave assurances that the condition would be placed on the 1986 Land Use Permit.

In June 1986, when the 1986 Land Use Permit was examined, the provision to require the prominant display of the "Guide Book" had once again been omitted. Subsequent to this discovery, appropriate changes were placed in an ammended Land User Permit. In September, an inspection of the access point facilities revealed that copies of the "Guide Book" were indeed prominantly displayed.

DAM REPAIRS

The dam repair projects are located on the Albany River (Cedar Channels and Rat Rapids) just south of Pickle Lake. The structures are part of a control system used to regulate water levels in Lake St. Joseph. Waters which historically flowed down the Albany are diverted to the English River system where hydro generating facilities are in place.

At the Rat Rapids site there are three structures, one main dam and two control structures called north and south dams. To maintain the integrity of the control facility, defective structures were removed and replaced with new facilities in 1984 and 1985. This involved treatment of the main dam with impervious till and structural alterations to the north dam to improve sluiceway capability.

When the construction activity at the Rat Rapids site was completed no environmental concerns were evident. Note that for the upstream (Figure 27) and downstream (Figure 28) views of the north structure:

1) The rock material used for the dam did not appear susceptible to erosion. Slopes were stable. (Figure 27).

2) Adjoining shoreline did not appear adversely affected by the construction activity.

3) All extraneous construction material and refuse was removed from the site.

At the Cedar Channels site there are two dams (north and south) both of which utilized rock dams constructed upstream (Figure 29-33) during the summer.

These dams were constructed of material that offered a stable shoreline (Figure 30, 33). The base material did not contain fine particulate. (Figure 33). Installation of the dams did not interfere with walleye spawning. There was, we assume, minimal habitat distrubance due to the materials used and low flows at the time of installation.

RIVER BANK STABILIZATION

At several sites on the Neebing River rock gabions were installed in order to reduce bank erosion (Figures 34, 35). Construction was carried out during low flow periods and the resulting increase in turbidity by the disturbance of the river bank was minimal. The rock material used for the dams did not appear susceptible to erosion. Slopes were stable (Figure 34 and 35).

CONCLUSIONS AND RECOMMENDATIONS

Audits of various undertakings carried out in northwestern Ontario in 1986 indicate that most of the activities inspected complied with the Environmental Assessment Act. In many cases, discussion on site, of environmental concerns with construction personnel, served to remind proponents of the necessity of environmental safeguards. This, in itself, made the auditing procedure worthwhile.

Although it is clear that proponent compliance, based on 1986 field audits, was generally good, the disposition of crown land by Ministry of Natural Resources may be cause for concern. On the basis of the high profile issue examined, it is apparent that Ministry of Natural Resources staff in this area do not consider the EA process to be a priority issue.

Fig. 1, 2: TC6 - Bridge over Current River

Fig. 1

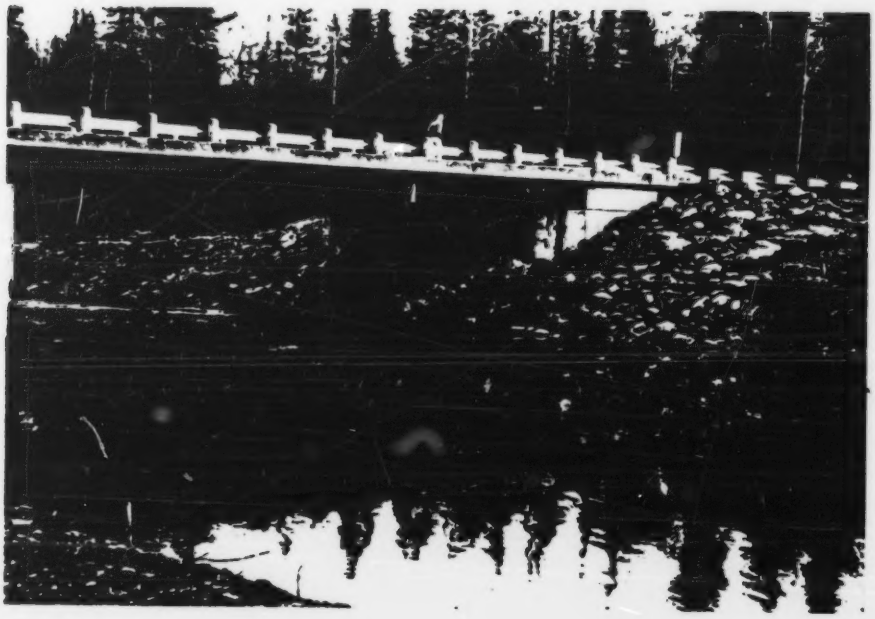

Fig. 2

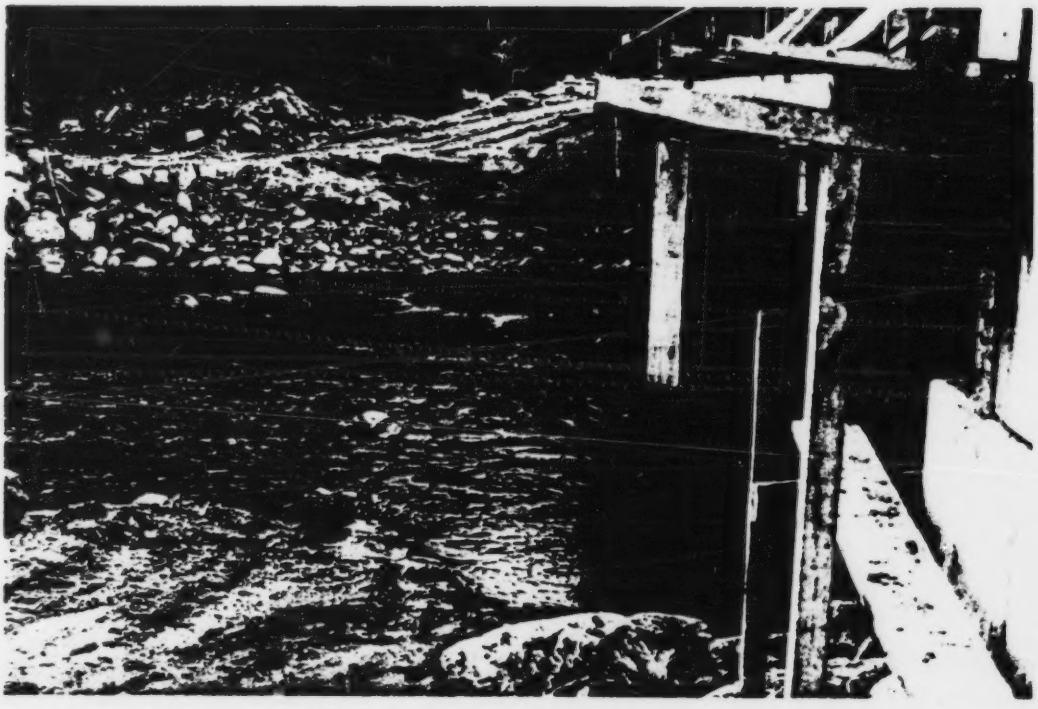

Fig. 3, 4: TC19 - Kenora Bypass, Bridge over East Branch of Winnipeg River

Fig. 3

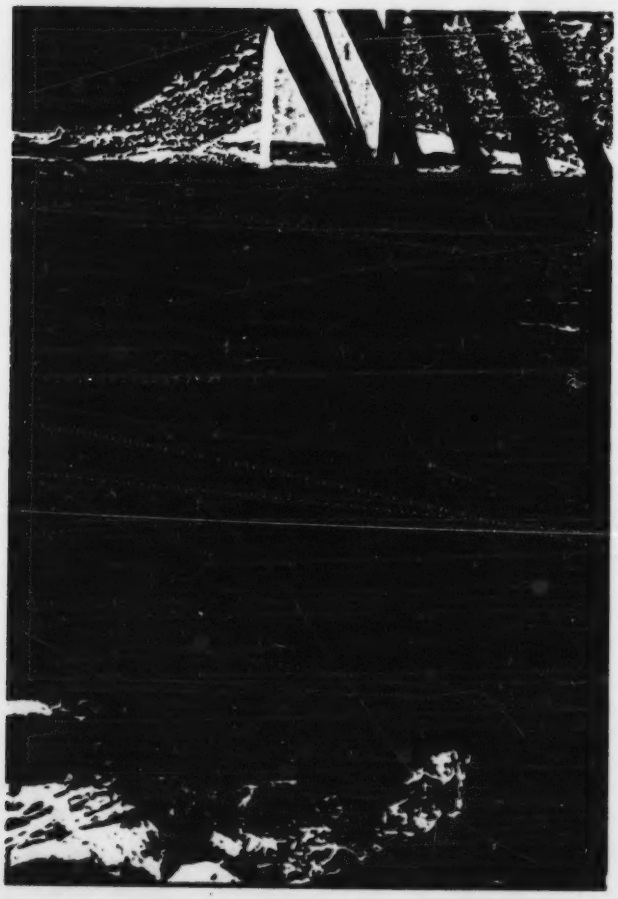

Fig. 4

Fig. 5: TC1 - Pic River Bridge

Fig. 5

Fig. 6, 7: TC20 - Keewatin Bridge

Fig. 6

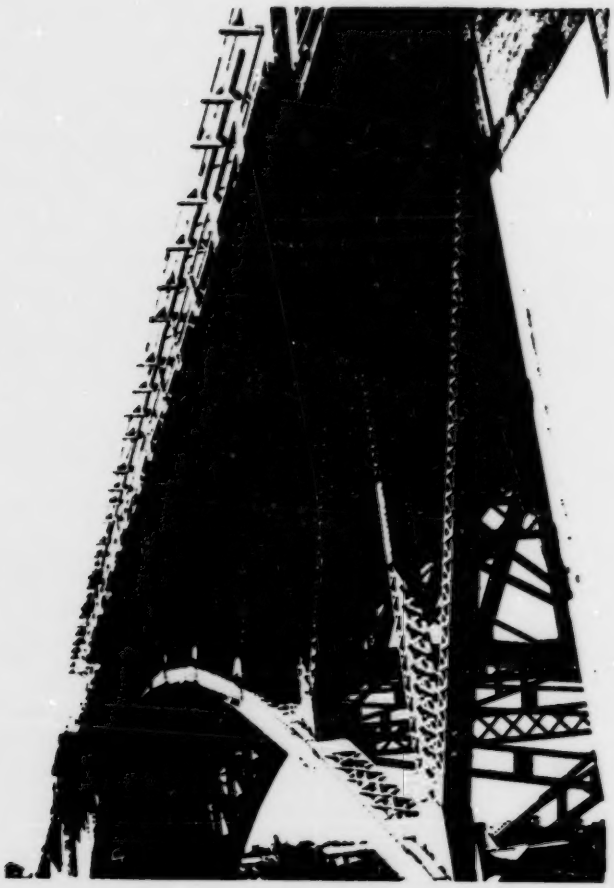

Fig. 7

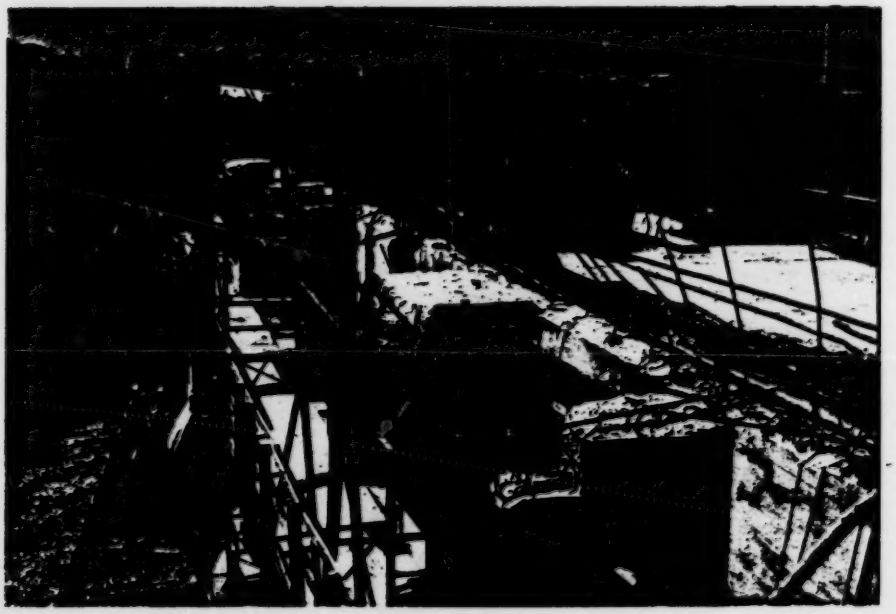

Fig. 8, 9: TC14 - Gulliver River Bridge

Fig. 8

Fig. 9

Fig. 10, 11: TC14 - Gulliver River Bridge

Fig. 10

Fig. 11

Fig. 12: TC6 - Current River Bridge

Fig. 12

Fig. 13: TC7 - Highway 595

Fig. 13

Fig. 14: TC9 - Highway 17

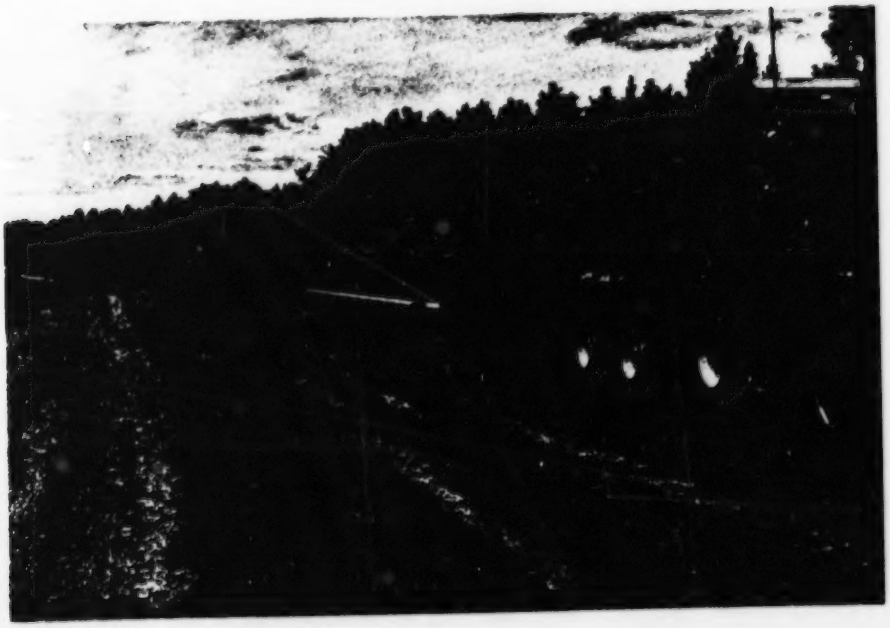

Fig. 14

Fig. 15: TC15 - Highway 599

Fig. 16: TC2 - Highway 626

Fig. 17: TC7 - Highway 595

Fig. 17

Fig. 18: TC17 - Bending Lake Road

Fig. 18

Fig. 19: TC18 - Highway 17

Fig. 20: TC14 - Gulliver River

Fig. 21: TC17 - Bending Lake Road

Fig. 22: TC2 - Highway 626

Fig. 23, 24: NR1 - Steel River Access Road

Fig. 23

Fig. 24

Fig. 25, 26: TC4 - Pays Plat River

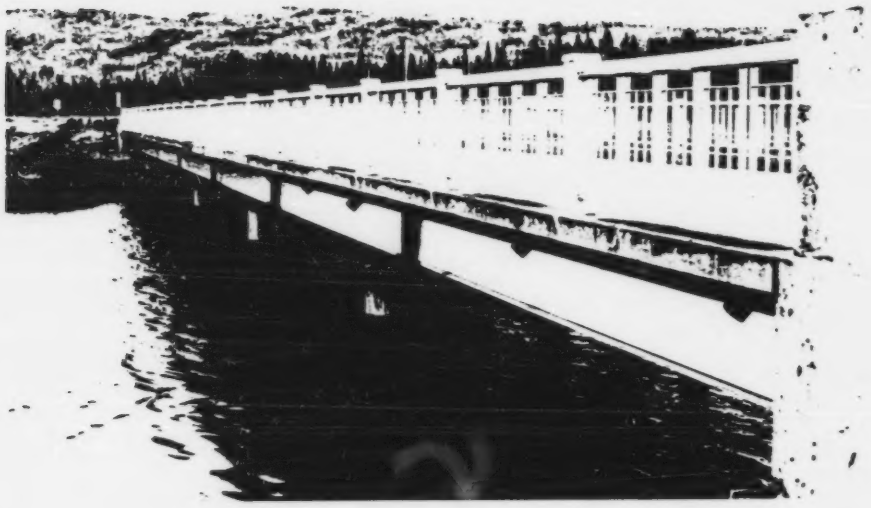

Fig. 25

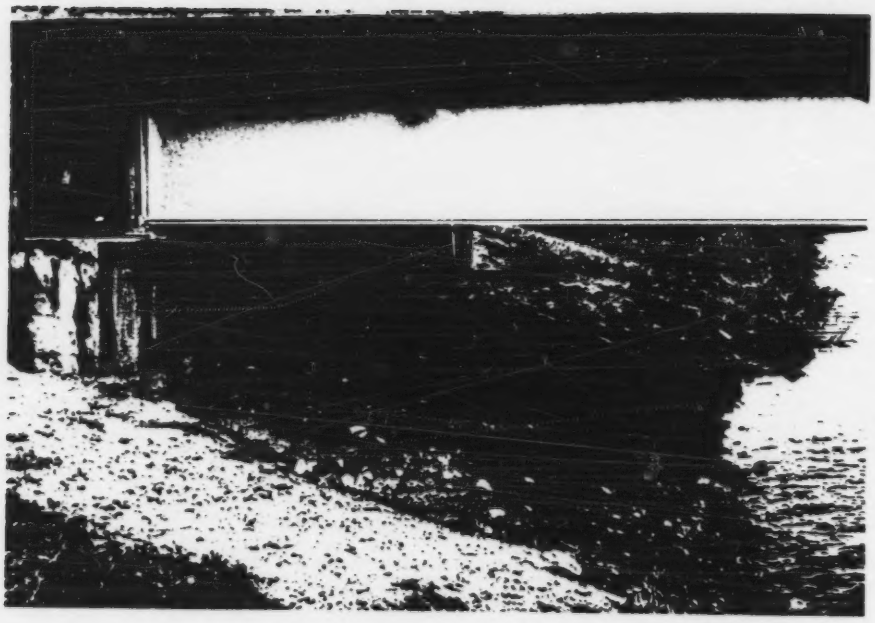

Fig. 26

Fig. 27: OH1 - Rat Rapids Dam - upstream

Fig. 28: OH1 - Rat Rapids Dam - downstream

Fig. 29: OH2 - Cedar Channels Dam, south dam, upstream

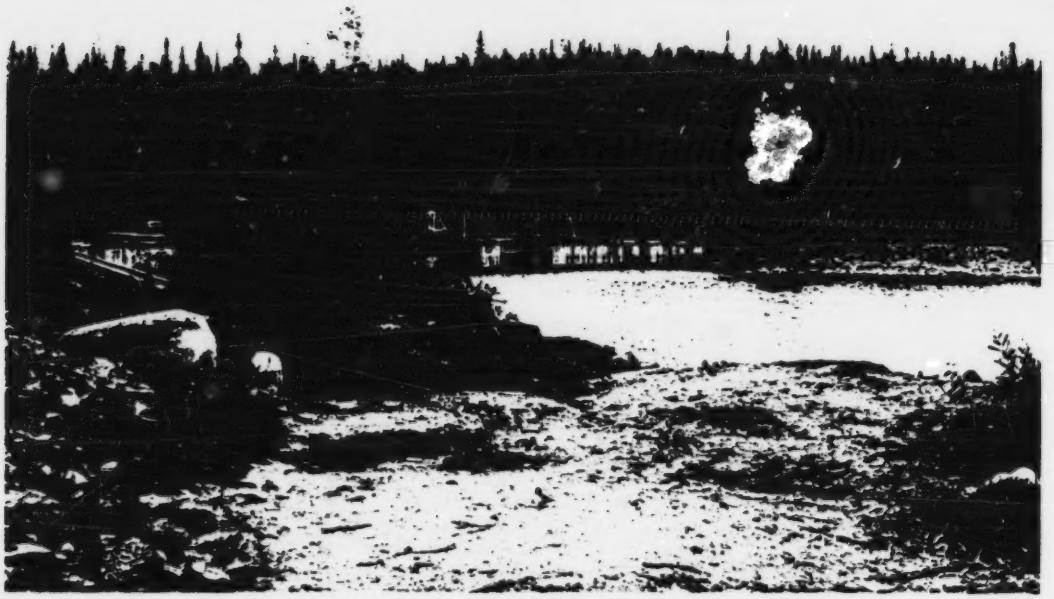

Fig. 30: OH2 - Cedar Channels, south dam, after additional dam installed

Fig. 31: OH2 - Cedar Channels, north dam, upstream on left

Fig. 32: OH2 - Cedar Channels, north dam, after additional dam installed

Fig. 33: OH2 - Cedar Channels, north dam
after additional dam installed

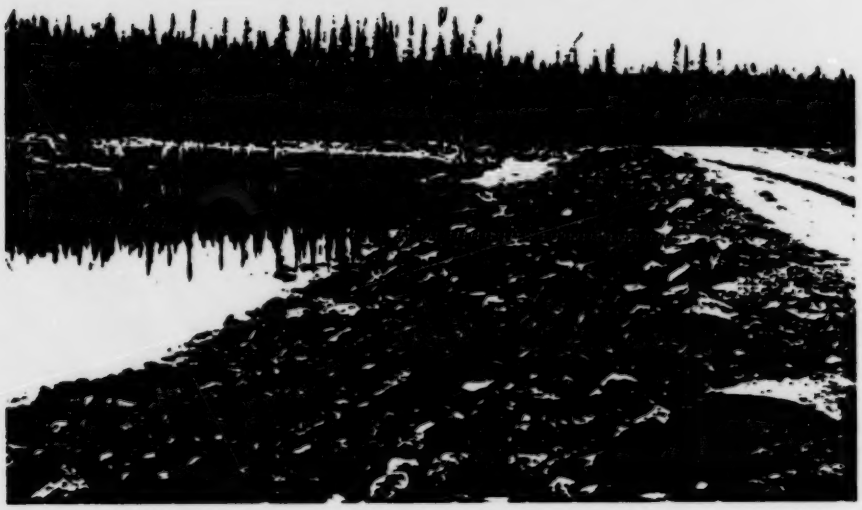

Fig. 34: LCA - Neebing River

Fig. 35: LCA - Neebing River